

FIG. 1A

atg gtc agc atg tca atg tcc tat aca tgg aca ggc gcc ctg atc aca Met Ala Ser Met Ser Met Tyr Thr Trp Thr Gly Ala Leu Ile Thr	48
1 5 10 15	
ccg tgc gct gcg gag gaa agc aag ctg ccc atc aac gcg ctg agc aac Pro Cys Ala Ala Glu Glu Ser Lys Leu Pro Ile Asn Ala Leu Ser Asn	96
20 25 30	
tcc ttg ctg cgt cac cat aac ctg gtc tat tcc aca aca tcc cgc agt Ser Leu Leu Arg His His Asn Leu Val Tyr Ser Thr Thr Ser Arg Ser	144
35 40 45	
gca agc ctg cgg cag aag aag gtc acc ttt gac aga ctg caa gtc ctg Ala Ser Leu Arg Gln Lys Lys Val Thr Phe Asp Arg Leu Gln Val Leu	192
50 55 60	
gac gat cat tac cgg gac gtg ctc aag gag atg aag gcg aag gcg tcc Asp Asp His Tyr Arg Asp Val Leu Lys Glu Met Lys Ala Lys Ala Ser	240
65 70 75 80	
aca gtg aag gct aaa ctg cta tct gta gaa gaa gca tgc aag ctg acg Thr Val Lys Ala Lys Leu Leu Ser Val Glu Glu Ala Cys Lys Leu Thr	288
85 90 95	
ccc ccg cat tcg gcc aaa tcc aaa ttt ggc tat ggg gca aag gac gtc Pro Pro His Ser Ala Lys Ser Lys Phe Gly Tyr Gly Ala Lys Asp Val	336
100 105 110	
cgg agc cta tcc agc agg gcc gtt aac cac atc cgc tcc gtg tgg aag Arg Ser Leu Ser Ser Arg Ala Val Asn His Ile Arg Ser Val Trp Lys	384
115 120 125	
gac ttg ctg gag gac act gac aca cca att cag acc acc atc atg gca Asp Leu Leu Glu Asp Thr Asp Thr Pro Ile Gln Thr Thr Ile Met Ala	432
130 135 140	
aaa aat gag gtt ttc tgc gtc caa cca gag aaa gga ggc cgc aaa cca Lys Asn Glu Val Phe Cys Val Gln Pro Glu Lys Gly Arg Lys Pro	480
145 150 155 160	
gct cgc ctc atc gta ttc cca gac ctg gga gtt cgt gta tgc gag aag Ala Arg Leu Ile Val Phe Pro Asp Leu Gly Val Arg Val Cys Glu Lys	528
165 170 175	
atg gcc ctt tac gac gtg gtt tcc act ctt cct cag gcc gtg atg ggc Met Ala Leu Tyr Asp Val Val Ser Thr Leu Pro Gln Ala Val Met Gly	576
180 185 190	
tcc tca tac gga ttc caa tac tct cct aag cag cgg gtc gag ttc ctg Ser Ser Tyr Gly Phe Gln Tyr Ser Pro Lys Gln Arg Val Glu Phe Leu	624
195 200 205	
gtg aat acc tgg aaa gca aag aaa tgc cct atg ggc ttc tca tat gac Val Asn Thr Trp Lys Ala Lys Lys Cys Pro Met Gly Phe Ser Tyr Asp	672
210 215 220	

## FIG. 1B

acc cgc tgt ttt gac tca acg gtc act gag aat gac atc cgt gtt gag		720
Thr Arg Cys Phe Asp Ser Thr Val Thr Glu Asn Asp Ile Arg Val Glu		
225	230	235
		240
gag tca att tac caa tgt tgt gac ttg gcc ccc gaa gct aga cag gcc		768
Glu Ser Ile Tyr Gln Cys Cys Asp Leu Ala Pro Glu Ala Arg Gln Ala		
245	250	255
ata agg tcg ctc aca gag cgg ctc tat gtc ggg ggt ccc atg act aac		816
Ile Arg Ser Leu Thr Glu Arg Leu Tyr Val Gly Gly Pro Met Thr Asn		
260	265	270
tcc aaa ggg cag aac tgc ggc tat cgc cgg tgc cgc gcg agc ggc gtg		864
Ser Lys Gly Gln Asn Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val		
275	280	285
ctg acg act agc tgc ggt aat acc ctc aca tgc tac ttg aag gcc gct		912
Leu Thr Thr Ser Cys Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ala		
290	295	300
gca gcc tgt cga gct gcc aag ctc cag gac tgc acg atg ctc gtg aat		960
Ala Ala Cys Arg Ala Ala Lys Leu Gln Asp Cys Thr Met Leu Val Asn		
305	310	315
		320
gga gac gac ctt gtc gtt atc tgt gaa agc gcg gga acc caa gag gac		1008
Gly Asp Asp Leu Val Val Ile Cys Glu Ser Ala Gly Thr Gln Glu Asp		
325	330	335
gcg gca agc cta cga gtc ttc acg gag gct atg act agg tac tct gcc		1056
Ala Ala Ser Leu Arg Val Phe Thr Glu Ala Met Thr Arg Tyr Ser Ala		
340	345	350
ccc cct ggg gac ccg ccc caa ccg gaa tac gac ttg gag ctg ata aca		1104
Pro Pro Gly Asp Pro Pro Gln Pro Glu Tyr Asp Leu Glu Leu Ile Thr		
355	360	365
tcg tgt tcc tcc aat gtg tcg gtc gca cac gat gca tct ggc aaa agg		1152
Ser Cys Ser Ser Asn Val Ser Val Ala His Asp Ala Ser Gly Lys Arg		
370	375	380
gtg tac tac ctc acc cgt gac ccc acc gtc ccc ctt gcg cggt gct gcg		1200
Val Tyr Tyr Leu Thr Arg Asp Pro Thr Val Pro Leu Ala Arg Ala Ala		
385	390	395
		400
tgg gag aca gct agg cac act cca gtc aac tcc tgg cta ggc aac atc		1248
Trp Glu Thr Ala Arg His Thr Pro Val Asn Ser Trp Leu Gly Asn Ile		
405	410	415
atc atg tat gcg ccc act ttg tgg gca agg atg att ctg atg act cac		1296
Ile Met Tyr Ala Pro Thr Leu Trp Ala Arg Met Ile Leu Met Thr His		
420	425	430
tcc ttc tcc atc ctt cta gcc cag gag caa ctt gaa aaa gcc ctg gat		1344
Phe Phe Ser Ile Leu Leu Ala Gln Glu Gln Leu Glu Lys Ala Leu Asp		
435	440	445

## FIG. 1C

tgt cag atc tac ggg gct tgt tac tcc att gag cca ctt gac cta cct Cys Gln Ile Tyr Gly Ala Cys Tyr Ser Ile Glu Pro Leu Asp Leu Pro 450 455 460	1392
cag atc att gaa cga ctc cat ggt ctt agc gca ttt tca ctc cat agt Gln Ile Ile Glu Arg Leu His Gly Leu Ser Ala Phe Ser Leu His Ser 465 470 475 480	1440
tac tct cca ggt gag atc aat agg gtg gct tca tgc ctc agg aag ctt Tyr Ser Pro Gly Glu Ile Asn Arg Val Ala Ser Cys Leu Arg Lys Leu 485 490 495	1488
ggg gta cca ccc ttg cga gtc tgg aga cat cgg gcc aga agt gtc cgc Gly Val Pro Pro Leu Arg Val Trp Arg His Arg Ala Arg Ser Val Arg 500 505 510	1536
gct aag tta ctg tcc cag ggg ggg agg gcc gcc att tgt ggc aag tac Ala Lys Leu Leu Ser Gln Gly Gly Arg Ala Ala Ile Cys Gly Lys Tyr 515 520 525	1584
ctc ttc aac tgg gca gta agg acc aag ctt aaa ctc act cca att ccg Leu Phe Asn Trp Ala Val Arg Thr Lys Leu Lys Leu Thr Pro Ile Pro 530 535 540	1632
gct gcg tcc cgg ctg gac ttg tcc ggc tgg ttc gtt gct ggc tac agc Ala Ala Ser Arg Leu Asp Leu Ser Gly Trp Phe Val Ala Gly Tyr Ser 545 550 555 560	1680
ggg gga gac ata tat cac agc ctg tct cgt gcc cga ccc cgc tgg ttc Gly Gly Asp Ile Tyr His Ser Leu Ser Arg Ala Arg Pro Arg Trp Phe 565 570 575	1728
atg ttg tgc cta ctc cta ctc tcc gta ggg gta ggc atc tat cta ctc Met Leu Cys Leu Leu Leu Ser Val Gly Val Gly Ile Tyr Leu Leu 580 585 590	1776
ccc -aac cgg cat cac cat cac cat cac Pro Asn Arg His His His His His 595 600	1803

## FIG. 2A

atg gct agc atg tca atg tcc tat aca tgg aca ggc gcc ctg atc aca Met Ala Ser Met Ser Met Ser Tyr Thr Trp Thr Gly Ala Leu Ile Thr 1                   5                   10                   15	48
ccg tgc gct gcg gag gaa agc aag ctg ccc atc aac gcg ctg agc aac Pro Cys Ala Ala Glu Glu Ser Lys Leu Pro Ile Asn Ala Leu Ser Asn 20                   25                   30	96
tcc ttg ctg cgt cac cat aac ctg gtc tat tcc aca aca tcc cgc agt Ser Leu Leu Arg His His Asn Leu Val Tyr Ser Thr Thr Ser Arg Ser 35                   40                   45	144
gca agc ctg cgg cag aag gtc acc ttt gac aga ctg caa gtc ctg Ala Ser Leu Arg Gln Lys Lys Val Thr Phe Asp Arg Leu Gln Val Leu 50                   55                   60	192
gac gat cat tac cgg gac gtg ctc aag gag atg aag gcg aag gcg tcc Asp Asp His Tyr Arg Asp Val Leu Lys Glu Met Lys Ala Lys Ala Ser 65                   70                   75                   80	240
aca gtg aag gct aaa ctg cta tct gta gaa gaa gca tgc aag ctg acg Thr Val Lys Ala Lys Leu Leu Ser Val Glu Glu Ala Cys Lys Leu Thr 85                   90                   95	288
ccc ccg cat tcg gcc aaa tcc aaa ttt ggc tat ggg gca aag gac gtc Pro Pro His Ser Ala Lys Ser Lys Phe Gly Tyr Gly Ala Lys Asp Val 100                105                110	336
cgg agc cta tcc agc agg gcc gtt aac cac atc cgc tcc gtg tgg aag Arg Ser Leu Ser Ser Arg Ala Val Asn His Ile Arg Ser Val Trp Lys 115                120                125	384
gac ttg ctg gag gac act gac aca cca att cag acc acc atc atg gca Asp Leu Glu Asp Thr Asp Thr Pro Ile Gln Thr Thr Ile Met Ala 130                135                140	432
aaa aat gag gtt ttc tgc gtc caa cca gag aaa gga ggc cgc aaa cca Lys Asn Glu Val Phe Cys Val Gln Pro Glu Lys Gly Arg Lys Pro 145                150                155                160	480
gct cgc ctc atc gta ttc cca gac ctg gga gtt cgt gta tgc gag aag Ala Arg Leu Ile Val Phe Pro Asp Leu Gly Val Arg Val Cys Glu Lys 165                170                175	528
atg gcc ctt tac gac gtg gtt tcc act ctt cct cag gcc gtg atg ggc Met Ala Leu Tyr Asp Val Val Ser Thr Leu Pro Gln Ala Val Met Gly 180                185                190	576
tcc tca tac gga ttc caa tac tct cct aag cag cgg gtc gag ttc ctg Ser Ser Tyr Gly Phe Gln Tyr Ser Pro Lys Gln Arg Val Glu Phe Leu 195                200                205	624
gtg aat acc tgg aaa gca aag aaa tgc cct atg ggc ttc tca tat gac Val Asn Thr Trp Lys Ala Lys Lys Cys Pro Met Gly Phe Ser Tyr Asp 210                215                220	672

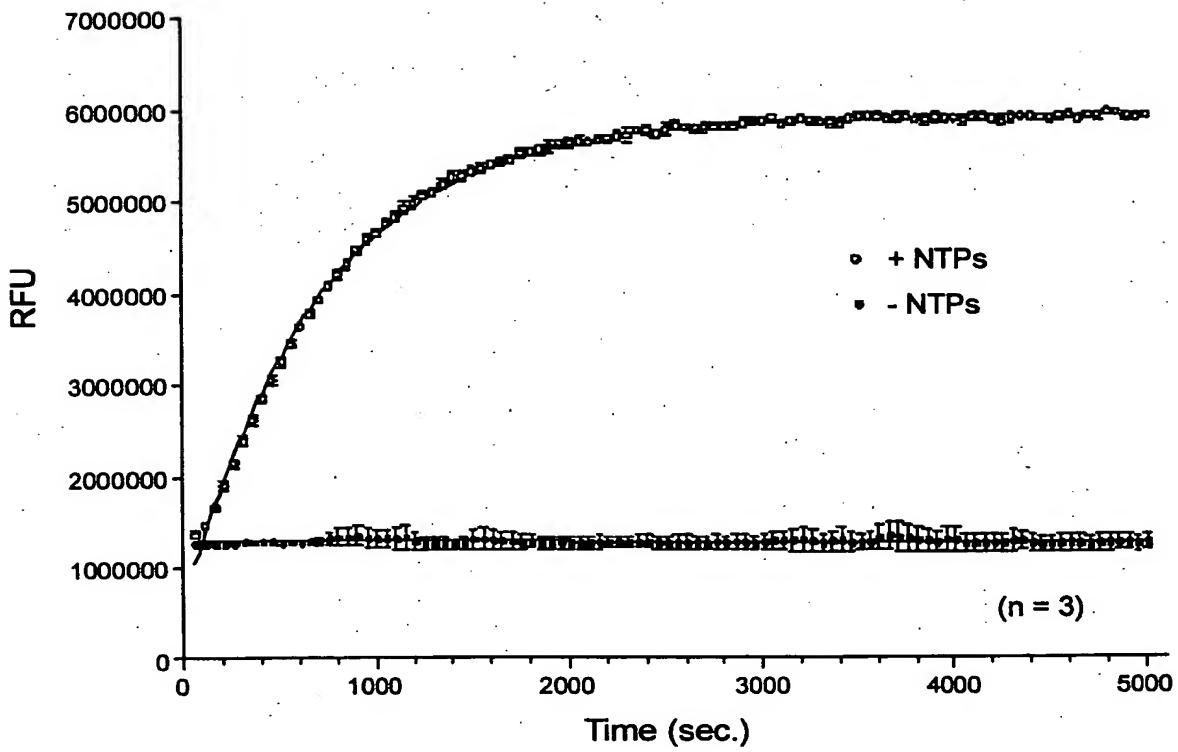
## FIG. 2B

acc cgc tgt ttt gac tca acg gtc act gag aat gac atc cgt gtt gag			720
Thr Arg Cys Phe Asp Ser Thr Val Thr Glu Asn Asp Ile Arg Val Glu			
225	230	235	240
gag tca att tac caa tgt tgt gac ttg gcc ccc gaa gct aga cag gcc			768
Glu Ser Ile Tyr Gln Cys Cys Asp Leu Ala Pro Glu Ala Arg Gln Ala			
245	250	255	
ata agg tcg ctc aca gag cgg ctc tat gtc ggg ggt ccc atg act aac			816
Ile Arg Ser Leu Thr Glu Arg Leu Tyr Val Gly Gly Pro Met Thr Asn			
260	265	270	
tcc aaa ggg cag aac tgc ggc tat cgc cgg tgc cgc gcg agc ggc gtg			864
Ser Lys Gly Gln Asn Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val			
275	280	285	
ctg acg act agc tgc ggt aat acc ctc aca tgc tac ttg aag gcc gct			912
Leu Thr Ser Cys Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ala			
290	295	300	
gca gcc tgt cga gct gcc aag ctc cag gac tgc acg atg ctc gtg aat			960
Ala Ala Cys Arg Ala Ala Lys Leu Gln Asp Cys Thr Met Leu Val Asn			
305	310	315	320
gga gac gac ctt gtc gtt atc tgt gaa agc gcg gga acc caa gag gac			1008
Gly Asp Asp Leu Val Val Ile Cys Glu Ser Ala Gly Thr Gln Glu Asp			
325	330	335	
gcg gca agc cta cga gtc ttc acg gag gct atg act agg tac tct gcc			1056
Ala Ala Ser Leu Arg Val Phe Thr Glu Ala Met Thr Arg Tyr Ser Ala			
340	345	350	
ccc cct ggg gac ccg ccc caa ccg gaa tac gac ttg gag ctg ata aca			1104
Pro Pro Gly Asp Pro Pro Gln Pro Glu Tyr Asp Leu Glu Leu Ile Thr			
355	360	365	
tcg tgt tcc tcc aat gtg tcg gtc gca cac gat gca tct ggc aaa agg			1152
Ser Cys Ser Ser Asn Val Ser Val Ala His Asp Ala Ser Gly Lys Arg			
370	375	380	
gtg tac tac ctc acc cgt gac ccc acc gtc ccc ctt gcg cggt gct gcg			1200
Val Tyr Tyr Leu Thr Arg Asp Pro Thr Val Pro Leu Ala Arg Ala Ala			
385	390	395	400
tgg gag aca gct agg cac act cca gtc aac tcc tgg cta ggc aac atc			1248
Trp Glu Thr Ala Arg His Thr Pro Val Asn Ser Trp Leu Gly Asn Ile			
405	410	415	
atc atg tat gcg ccc act ttg tgg gca agg atg att ctg atg act cac			1296
Ile Met Tyr Ala Pro Thr Leu Trp Ala Arg Met Ile Leu Met Thr His			
420	425	430	
ttc ttc tcc atc ctt cta gcc cag gag caa ctt gaa aaa gcc ctg gat			1344
Phe Phe Ser Ile Leu Leu Ala Gln Glu Gln Leu Glu Lys Ala Leu Asp			
435	440	445	

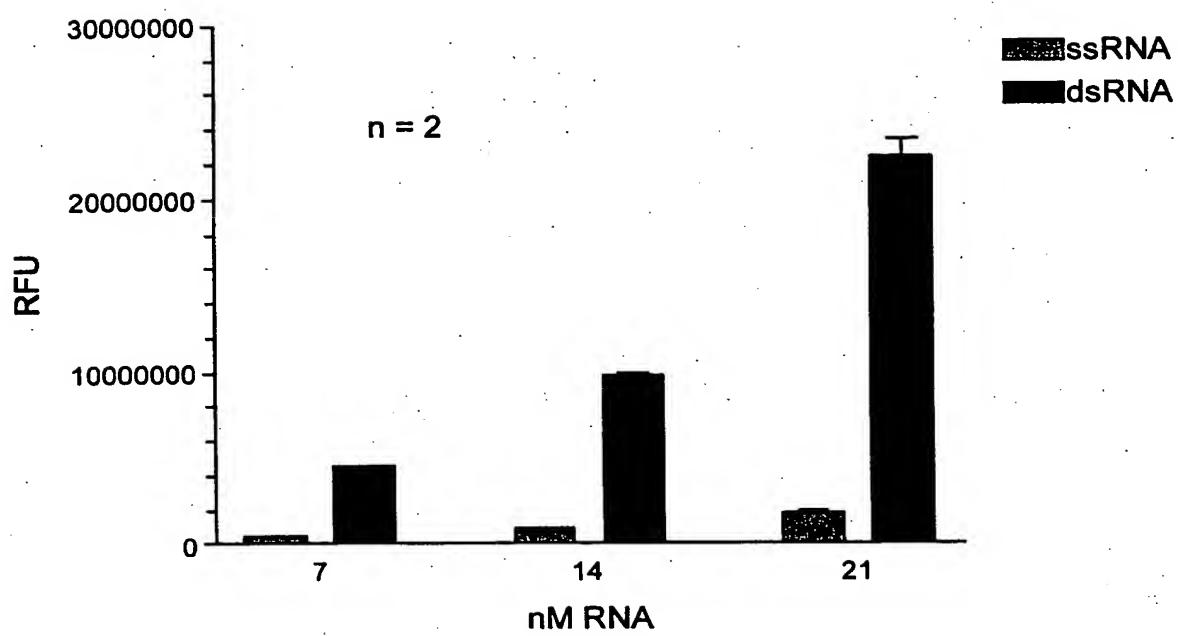
## FIG. 2C

tgt cag atc tac ggg gct tgt tac tcc att gag cca ctt gac cta cct Cys Gln Ile Tyr Gly Ala Cys Tyr Ser Ile Glu Pro Leu Asp Leu Pro 450 455 460	1392
cag atc att gaa cga ctc cat ggt ctt agc gca ttt tca ctc cat agt Gln Ile Ile Glu Arg Leu His Gly Leu Ser Ala Phe Ser Leu His Ser 465 470 475 480	1440
tac tct cca ggt gag atc aat agg gtg gct tca tgc ctc agg aag ctt Tyr Ser Pro Gly Glu Ile Asn Arg Val Ala Ser Cys Leu Arg Lys Leu 485 490 495	1488
ggg gta cca ccc ttg cga gtc tgg aga cat cgg gcc aga agt gtc cgc Gly Val Pro Pro Leu Arg Val Trp Arg His Arg Ala Arg Ser Val Arg 500 505 510	1536
gct aag tta ctg tcc cag ggg ggg agg gcc gcc att tgt ggc aag tac Ala Lys Leu Leu Ser Gln Gly Gly Arg Ala Ala Ile Cys Gly Lys Tyr 515 520 525	1584
ctc ttc aac tgg gca gta agg acc aag ctt aaa ctc act cca att ccg Leu Phe Asn Trp Ala Val Arg Thr Lys Leu Lys Leu Thr Pro Ile Pro 530 535 540	1632
gct gcg tcc cgg ctg gac ttg tcc ggc tgg ttc gtt gct ggc tac agc Ala Ala Ser Arg Leu Asp Leu Ser Gly Trp Phe Val Ala Gly Tyr Ser 545 550 555 560	1680
ggg gga gac ata tat cac agc ctg tct cgt gcc cga ccc cgc cat cac Gly Gly Asp Ile Tyr His Ser Leu Ser Arg Ala Arg Pro Arg His His 565 570 575	1728
cat cac cat cac His His His His 580	1740

FIG. 3



**FIG. 4**



**FIG. 5A**

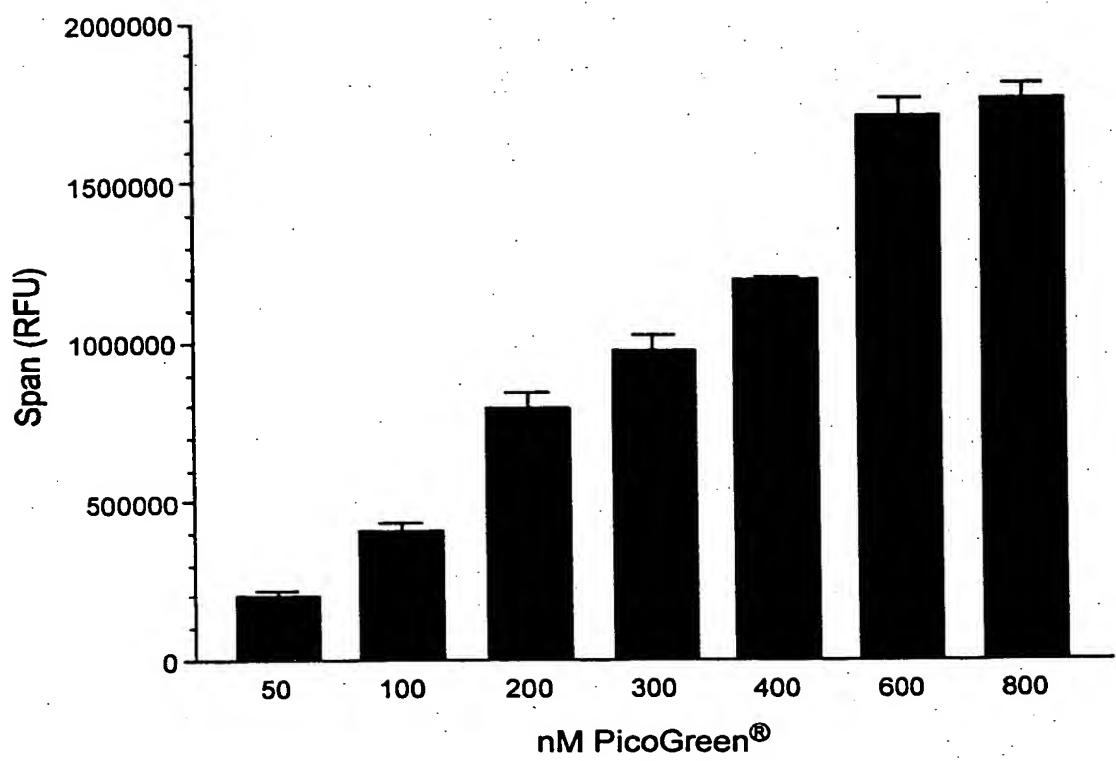
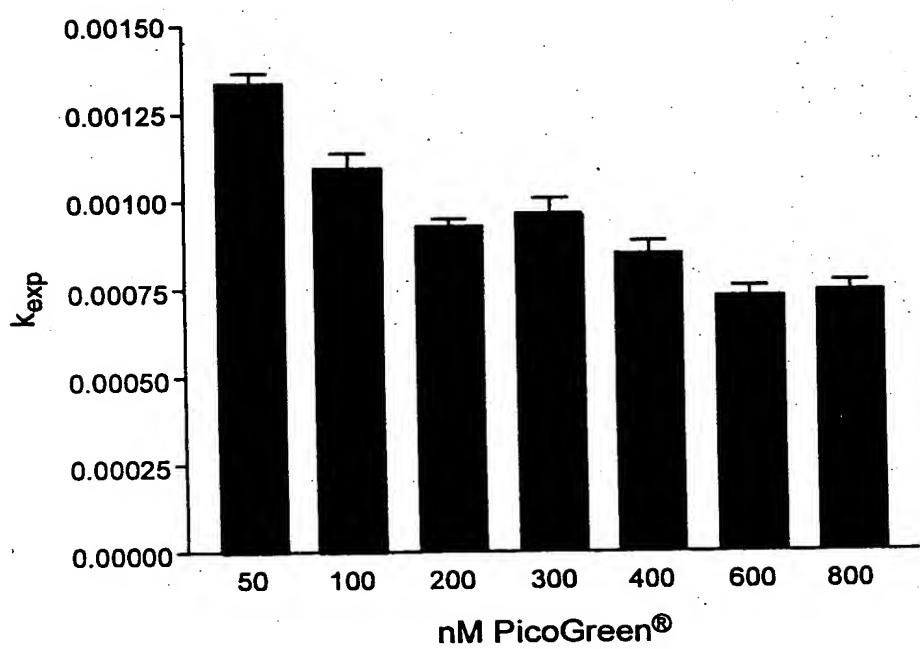


FIG. 5B



**FIG. 5C**

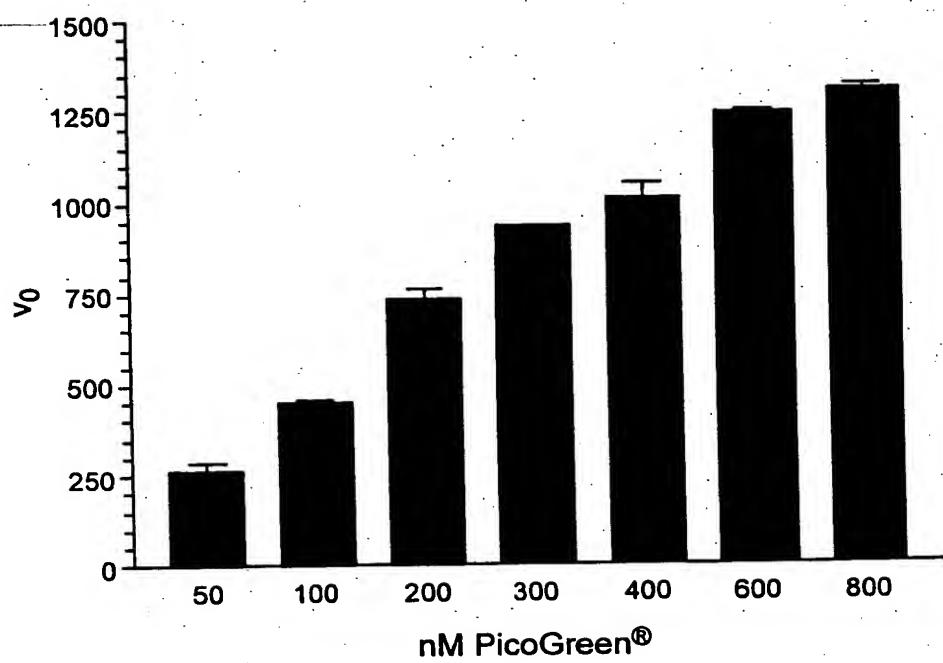
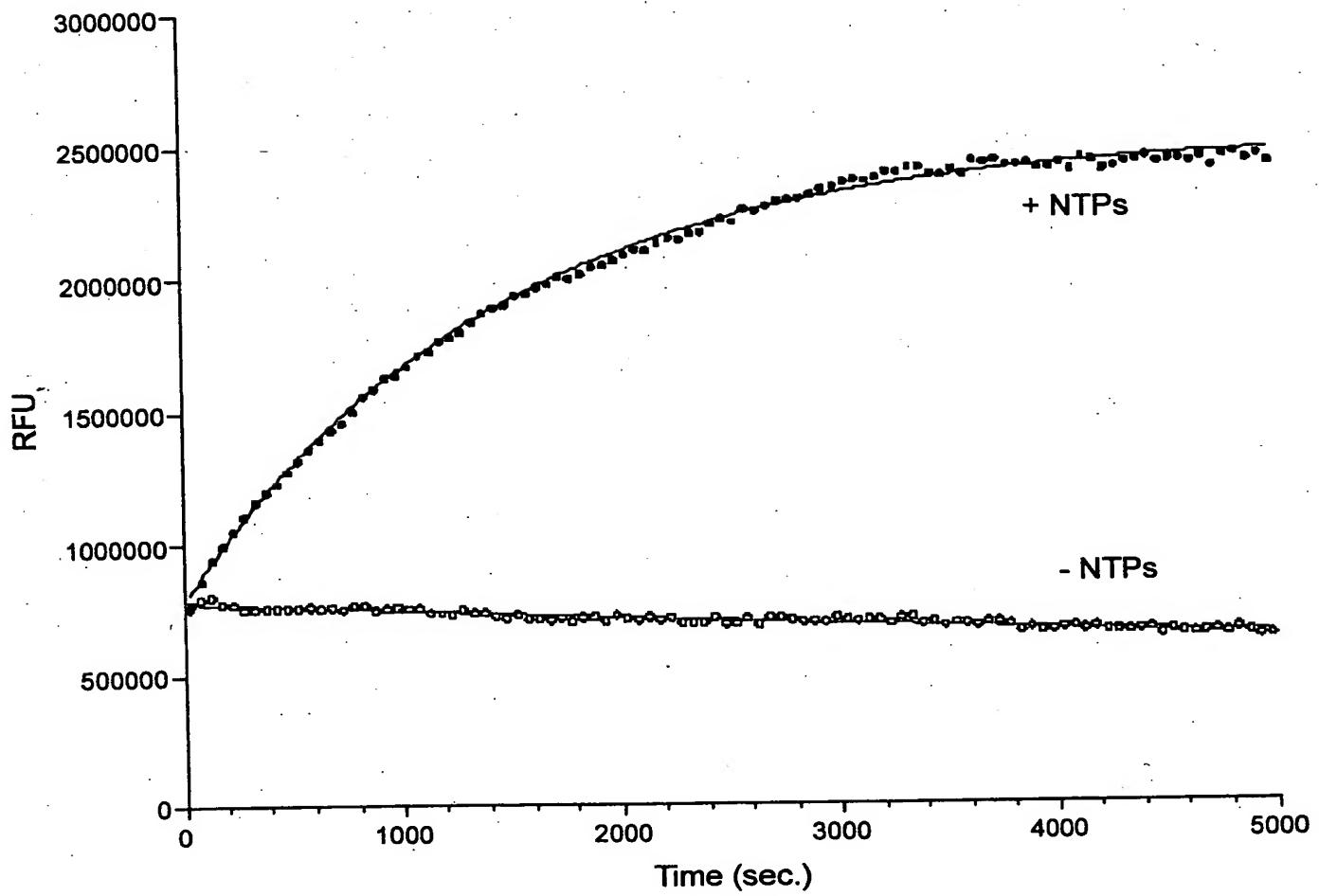


FIG. 6



**FIG. 7**

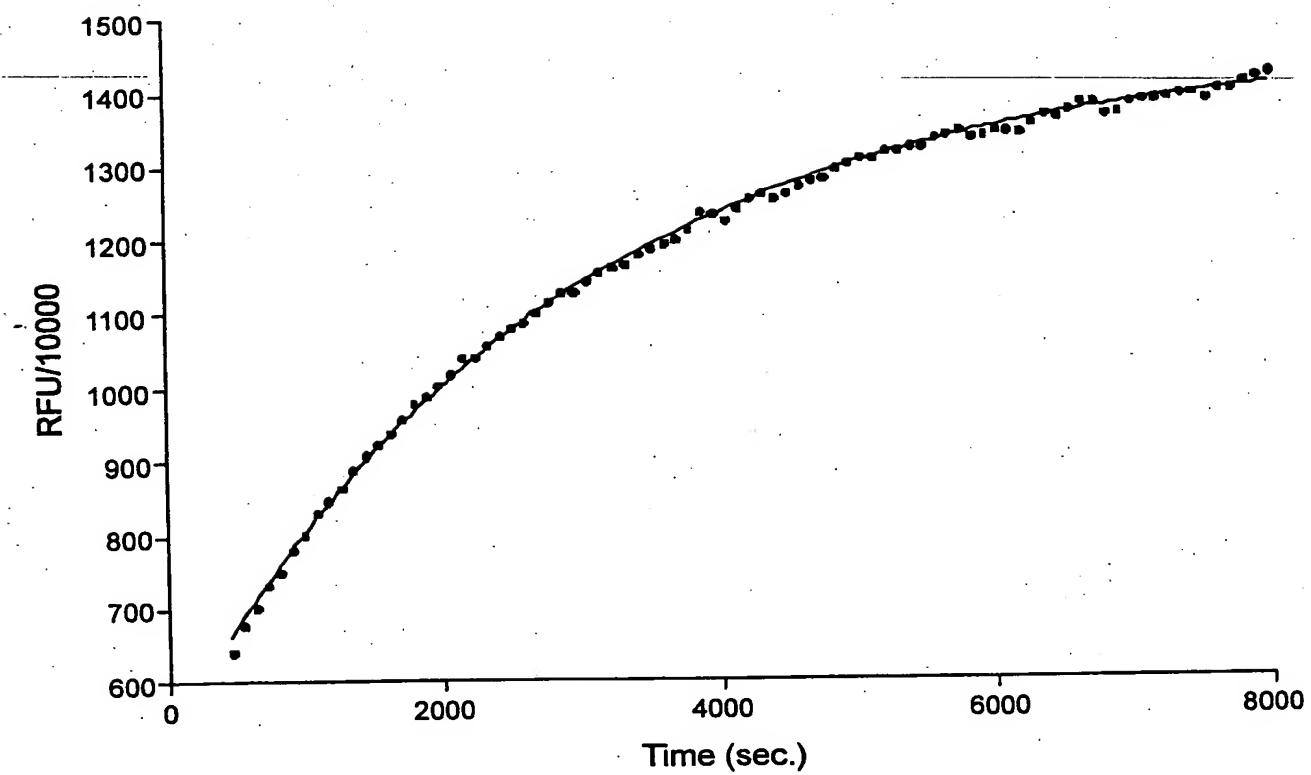


FIG. 8

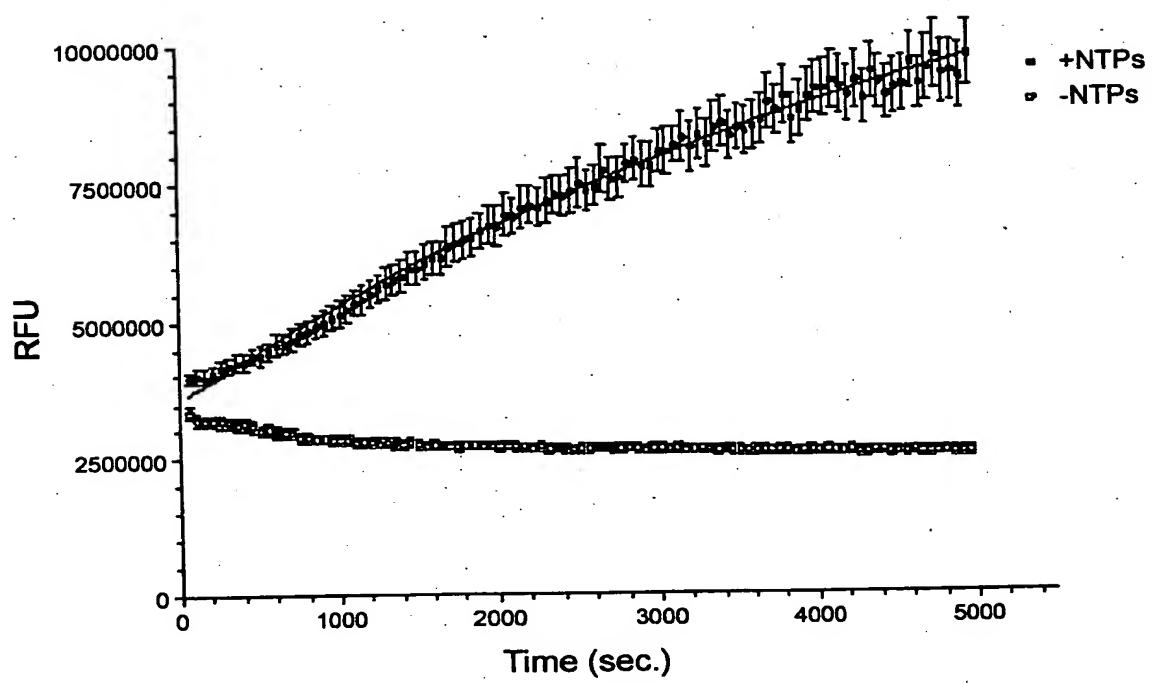


FIG. 9

